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TO: BOARD OF DIRECTORS

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SUBJECT: CAL/OSHA RECLASSIFICATION OF WPLE SECTION 1,
REACH 2 TUNNELS

ISSUE

Update the Board on the naturally occurring underground gas impacts to the progress of WPLE Section 1, Tunnel Reach 2 construction.

BACKGROUND

The WPLE Section 1 Project is situated in a well-known methane gas zone that has been previously mapped by the Los Angeles Department of Building and Safety. The Project has been designed, and construction has been progressing using the appropriate materials and equipment to tunnel safely within this gassy underground environment.

Metro and its Contractors each employ safety teams that oversee the work in accordance with the CAL/OSHA regulations that apply to all tunnels with a "Gassy" classification. Tunnel Reach 1 of the project, between Wilshire/La Brea and Wilshire/Western was successfully completed in June 2019. Tunneling for

Reach 2, between Wilshire/La Brea and Wilshire/Fairfax began in October 2019. The Reach 2 tunnels have recently been experiencing automatic shutdowns of the Tunnel Boring Machines (TBMs) in response to gas detection in the tunnels. The gas is being detected by gas sensors located at various positions near the front of the TBM. The gas sensor alarm/shutdown is triggered when the methane gas levels reach an action level mandated by CAL/OSHA.

CAL/OSHA conservatively allows only a small fraction of gas in the tunnel working environment at any time. If gas is detected at the action limit, an alarm is generated and equipment (except for essential safety systems such as lighting and ventilation) is shut down. All gas encountered in the WPLE Section 1 Project (even the amounts over the reaction limit) is immediately diluted by the robust tunnel/station ventilation system. As required by CAL/OSHA procedures, staff must stop work, evacuate both tunnels and the Wilshire/La Brea Station, and then CAL OSHA is notified of the details of the alarm event. After CAL/OSHA confirms everything is safe, they clear the tunneling contractor to resume work. The clearance process with CAL/OSHA typically takes about 1 hour.

To date, the Project has experienced over 60 automatic shutdowns due to gas alarms. After having experienced this frequency of alarms, CAL/OSHA has reclassified the Project's Reach 2 tunnels as "Extra Hazardous", from the prior classification of "Gassy." This reclassification required the Project to add additional methane sensors in the existing ventilation ductwork.

NEXT STEPS

The C1045 Contractor (STS) completed the installation of the additional sensors in the ventilation ductwork and CAL/OSHA allowed the resumption of tunneling in Reach 2 on March 2, 2020. In addition, the Project staff, STS's tunneling contractor (Traylor) and the Project Engineering Consultant (WSP) continue to work together on various mitigations to tunneling operations and TBM equipment to lessen the number of automatic shutdowns of the TBMs, while continuing to mine safely as we have since the Project started tunnel mining in October of 2018.

The precast tunnel liner segments that make up the structure of the operating tunnel are double gasketed and bolted together which are designed to exclude any gas intrusion to the operating tunnels during revenue service.